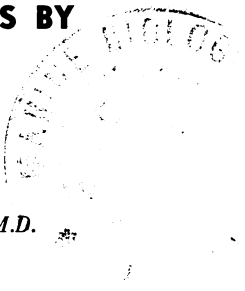
An increase in cases of syphilis led to a change in the reporting of cases of the disease in Pennsylvania. The results of four years of experience are reviewed, and the achievements and problems evaluated.

REPORTING OF REACTIVE SEROLOGIC TESTS BY LABORATORIES AS AN AID TO SYPHILIS CONTROL



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THE reporting of diseases to health departments has never been one of the most popular activities of physicians. There are some doctors who report all —or almost all—cases of reportable diseases in their practices, but others report only those cases which they think the health department should know about.

Until a few years ago, our experience in Pennsylvania was typical of that of most health departments. There were laws and regulations requiring the reporting of certain diseases. Communicable disease morbidity and mortality were decreasing. The more serious communicable diseases, especially those for which some official action was important for community protection, seemed to be generally well reported.

Syphilis was one of the exceptions. There was widespread reluctance to report the names of patients with this disease, so until 1958, syphilis in Pennsylvania was reported by number only—without name or address. A physician was required to report the name and address of a patient only if the patient failed to report for treatment. Prenatal blood tests were required unless, in the opinion of the physician, it was not advisable or the woman objected. Premarital blood tests were mandatory and laboratories had to be approved by the State Department of Health Laboratory to perform these tests.

Our venereal disease morbidity statistics for 1956 were disturbing. For that year we received notice of 3,695 cases of syphilis—an increase of 13 per cent over the previous year. These figures included 152 new primary and secondary cases. Obviously, there was clear indication for the need to intensify our effort to locate and treat all new cases of syphilis and reduce the reservoir of latent cases. Syphilis was second only to tuberculosis as a cause of death due to infective and parasitic disease.

The problem was presented to the State Advisory Health Board and new regulations were requested. In 1957, the board adopted two regulations which changed the concept of venereal disease reporting in Pennsylvania. The first regulation stated that: "Every physician who treats or examines any patient with a reportable communicable disease which is classed as a venereal disease shall make a prompt report of the disease in the manner prescribed. The report shall state the name and stage of the disease, the name, age, sex, race of the patient, and the address at

which the patient may be located." The second regulation required that the person in charge of a laboratory where an examination of a specimen from the human body yields evidence significant from a public health standpoint of the presence of any one of certain diseases named in the regulation shall promptly report such findings to the health authorities.

We again took stock of syphilis reporting at the end of 1957. Three thousand three hundred and sixty-two (3,362) cases of syphilis had been reported. On casual examination, the decrease of 333 cases seemed satisfactory. However, analysis of the records showed that morbidity reports from clinics, hospitals, and other institutions had decreased 6.1 per cent over 1956, and that morbidity reported by private physicians had decreased 27.2 per cent. This decrease in new cases reported by physicians was state-wide.

Further analysis of morbidity and annual laboratory reports in the files of the Venereal Disease Section showed that:

(1) Since 1940, there had been no significant change in the percentage of reactive premarital serologic tests for syphilis. In 1940, with reporting of some 13,000 cases of syphilis, the reactor rate was 1.37 per cent; in 1957, from only 3,362 cases reported, the rate was 1.44 per cent. The mean rate for 1940-1957 was 1.46 per cent.

(2) The serologic tests for syphilis performed in approved laboratories indicated little decrease in positive reactors over a nine-year span. In 1949, the reactor rate was 5.94 per cent; in 1957, 4.18 per cent; with a mean for the nine years of 4.56 per cent.

(3) For ten years, the average reactor rate of prenatal specimens examined was 2.52 per cent. In 1957, there were 152,632 prenatal specimens examined and 3,175 were reactive—2.08 per cent. There were 256,381 live births and 5,049 fetal deaths in 1957—which would suggest that more than 100,000 pregnant women did not have serologic tests for syphilis.

(4) In 1957, there were 52,971 reactive serologic tests for syphilis performed in approved laboratories—an increase of 19.3 per cent over 1956.

(5) The ratio of syphilis morbidity reported by private physicians to the number of serologic tests performed for private physicians was 1:78, while the ratio for clinics was 1:5.

It seemed that if we were to control syphilis effectively, we should use some of the information available in these laboratory reports. We decided to use the authority created by regulation and requested all directors of laboratories to report reactive serology to the Department of Health.

The objectives for inaugurating the program for laboratory reporting of reactive tests were explained in a statement published in the October, 1958, issue of the Pennsylvania Medical Journal.[1] This explanation to the physicians of the need for this program may have been largely responsible for its acceptance. The statement read in part:

"It must first be definitely understood that a laboratory finding does not constitute a diagnosis and that we, in the Department of Health, never interpret a laboratory report as a diagnosis. But, just as definitely, a positive laboratory report indicating a communicable disease is a 'red alert' pointing out the threat to the health of the people in that community and must be followed immediately to prevent the spread of the disease.

"Again, this is not a new practice of the Department of Health. For the past 15 or 16 years, it has been our policy to write a letter of inquiry to the family doctor of every patient who had sent specimens to the State Department of Health Laboratory and who had received a positive report indicating the possible presence of a communicable disease. During some years, as high as 40 per cent of the cases of brucellosis were reported as a result of these letters of inquiry.

"However, the majority of specimens are examined at laboratories other than those of the State Department of Health, and we never receive reports from them.

There have been many occasions when days or weeks have passed between the discovery in the laboratory of evidence of a case of communicable disease and positive action taken to prevent the spread of that disease. Even when an official morbidity report is sent to the Health Department, there is often a delay of three to ten days between the time the positive finding is made in the laboratory and the morbidity report is received by the Health Department. To close this gap, we asked the Advisory Health Board to consider this regulation.

"There is another type of gap that we hope to close by this regulation. Approved laboratories during 1957 reported 52,971 positive serologies, and again for 1957 private physicians reported 678 cases of syphilis. These figures made it imperative that we determine the exact number of cases of syphilis that this large number of positive serologies represents. It is our responsibility to make sure that every unreported case has had adequate treatment to prevent, first, the spread of the disease by finding and seeing that the untreated acute case secures treatment, and second, to prevent the late complications of untreated syphilis. If areas of increased prevalence of syphilis can be defined, intensified case-finding efforts will be instituted. This will be undertaken after consultation with, and approval by, the county medical society of the county in which the problem is found to exist.

"Every report that we receive will be followed by a letter of inquiry to the physician who requested the laboratory examination. We offer the help of our public health nurses, our epidemiologists and our health program representatives to the family doctor. All diagnoses must be made by the attending physician. The decision as to whether additional investigations will be made also is that of the attending physician. We think that the family doctor and the health department working together can prevent the spread of many cases of communicable diseases."

Procedure

Every director of a laboratory sends a duplicate copy of each report of reactive serology, with the name and address of the individual involved, to the State Department of Health or to the Philadelphia Department of Public Health, if the patient is a resident of that city.

Reactive laboratory reports are checked against the master index file of all previously reported syphilis cases.

For each reactor whose name is not in the file, we wait three weeks after the laboratory report to give the physician time to complete his diagnosis and report the disease, in accordance with regulations of the Advisory Health Board. If a report has not been received from the physician at the end of that period, a form letter and a partially completed confidential report of epidemiological follow-up of positive serology is sent to him. This tells the physician that a report from a laboratory suggested that his patient may have syphilis and no morbidity report has been received. He is asked to complete the form, giving his diagnosis of either "not infected" or "infected" and the stage of the disease. Because of the change in procedure from "no name reports" to reports containing the name of the patient, physicians are asked to tell us if they had previously reported the case by number.

If a report is not received within two weeks from the date of mailing of the first letter, another letter is sent again requesting completion of the morbidity form and its return to the department.

After another two weeks, if we have not received a reply, a venereal disease epidemiologic report is sent to the

Table 1—Syphilis Cases Reported

Year	Total Reported	Reported by Private Physician	Per cent
1956	3,695	1,043	28.2
1957	3,362	678	20.2
1958	5,738	3,011	52.5
1959	12,399	7,415	59.8
1960	12,352	6,823	55.2
1961	11,660	5,802 (49.7)	50.0

venereal disease inspector in the region where the physician lives. The investigator then visits the physician to secure the information necessary to complete the report.

Results

The memorandum to laboratories starting the reactive report program was dated May 5, 1958.

These were the results for that year:

(1) A dramatic increase in the number of reported cases for a total of 5,739 (compared with 3,362 cases in 1957)—the highest since 1950.

(2) Of reports of reactive serologic tests for syphilis, 15,131 were received from 198 approved laboratories during the last six months of 1958.

(3) Epidemiologic follow-up was necessary for 5,645 reactive reports.

(4) At the request of the attending physician, an investigator visited each of the 514 reactors who had not completed their examinations or treatment and encouraged them to seek further medical treatment. Of these, 191 were brought or returned to treatment (two primary or secondary, 25 early latent, 164 late latent). One hundred and ninety-one were found to have been adequately treated previously; 71 were not infected; 58 could not be located.

What have been the accomplishments of this program as it starts its fourth year?

Table 1 shows the marked increase in reporting of syphilis, with almost 50 per cent of all cases now reported by private physicians as compared with 20 per cent in 1957.

Table 2 shows the improvement in the ratio of reactive serology to cases reported by private physicians—from 1:78 in 1957 to 1:7 in 1961.

Table 3 shows improvement in early discovery of infectious syphilis.

This program seems to have been responsible for about 83 per cent of all syphilis reported in the state outside of Philadelphia and about 60 per cent in Philadelphia.

Some 24,792 persons have been followed up due to this program. Of these, 7,024 (28 per cent) were reported not infected, 2,854 (11 per cent) had previously reported infections, and 14,918 (61 per cent) had unreported infections.

Reaction of Physicians

The program demonstrated from the beginning that it was an efficient method of case finding. One question

Table 2—Ratio of Cases to Reactive Serologic Tests for Syphilis Reported to Laboratory

Year	Total	Clinic-Hospitals		Total	Private M.D.	
1957	2,684	14,248	1:5	678	52,971	1:78
1958	2,727	19,262	1:7	3,011	39,997	1:13
1959	4,984	18,115	1:4	7,415	40,029	1:5
1960	5,529	16,352	1:3	6,823	37,122	1:5
1961	5,858	18,013	1:3	5,802	39,406	1:7

remained to be answered. Would physicians accept this new procedure—this change in the method of reporting?

There was opposition. Practicing physicians and some laboratory directors wrote to the Department of Health expressing their concern as individuals and, in a general way, reflected the concern of other doctors in their area.

Laboratory directors expressed concern about two points: The first was interpretation of the section of the regulation which read "evidence significant from a public health standpoint." Some felt this did not mean the results of routine serology and wanted to be selective in the tests they reported to the department. Their other concern was relative to reaction and, as they expressed it, "resentment of physicians on our staff about how to maintain the objectivity of the laboratory."

Practicing physicians expressed concern about laboratory findings being interpreted as a diagnosis—worthless paper work for obviously false-positives, physician-patient relationship, challenge to the prerogatives of the practicing physician, concern for the anonymity of the patient and confidentiality of the reports.

The concern of the physician reflected the social stigma that is attached to the diagnosis of venereal disease. One county medical society introduced a resolution into the House of Delegates of the State Medical Society stating that the regulation seemed to be an intrusion of a governmental agency into the intimate doctor-patient relationship and that no adequate safeguard had been set up to keep these reports in the strictest confidence, and that a mechanism should be worked out to keep the patient's name out of department files until such time as he has been proved recalcitrant. One society asked the House to view with displeasure the recent regulation and asked the Council on Scientific Advancement to see what could be done to modify it. At the same time, they commended the Health Department for its awakened interest in preventive medicine.

Table 3—Improved Case Finding of Early Syphilis (Primary and Secondary)

Year	Total	State (Outside Philadelphia)	Philadelphia
1957	119	41	78
1960	513	121	392
1961	851	196	655

The Health Department presented a report to the Council on Scientific Advancement assuring them that names of the individuals reported are kept in strictest confidence, noted the necessity for names in order to avoid duplication, and emphasized that almost three times as many cases of syphilis were reported in 1959 as in 1957. The Council was asked if a method of reporting could be devised which would be as effective as a case-finding method.

The Council on Scientific Advancement "agreed emphatically with the policy of the Department of Health and recommends that the names of individuals with positive serologies continue to be reported to the Pennsylvania Department of Health and that Approved Laboratories continue to forward reports to the Department as presently required."

We have written or visited some 8,000 different physicians and have been refused information by 15. Five physicians each year refused us permission to interview cases of primary and secondary syphilis for sex contacts. We were sure that most physicians would cooperate and accept our help in epidemiology and we have not been disappointed.

We were surprised, in reviewing our files, to find only nine letters written to the department complaining about the

program. Visits were requested by seven hospitals to discuss the problems created by the new reporting system. There were phone calls and discussions at meetings where members of the department happened to be present. A few physicians still object, but as yet none has suggested a different method which will achieve or provide the same results. They know we are willing to accept another method if and when it is conceived, and this willingness on our part has been a help.

The Future

There are still problems to be solved. There is a time lag between examination of specimens and reporting to the State Department of Health. Local health departments can modify this program to meet their needs. Philadelphia, for instance, requires an immediate report on high titers. Only two reports of positive-dark-field examinations have been sent to the department. We ask for reactive serology and we get reactive serology. We will request that the results indicating infectious syphilis be reported promptly. There are still some laboratories failing to report on all reactive serologies, but we feel this situation will improve.

Basic laws drafted with competent legal assistance, sound regulations administered with recognition of the rights of physicians and patients, good communications, and a well trained field staff of venereal disease investigators have combined to make this program of reporting of reactive serologic tests by laboratories an effective syphilis case-finding technic.

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REFERENCE

1. Wilbar, Charles L., Jr. Laboratory Reports and the Health Department. Pennsylvania M. J. 61:1386–1387 (Oct.), 1958.

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